Application No.: 10/617,833 **Docket No.: 2336-194**

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. **(currently amended)** A semiconductor laser device, comprising:

a semiconductor substrate;

a lower clad layer formed on the semiconductor substrate;

a lower guide layer formed on the lower clad layer;

an active layer formed on the lower guide layer;

an upper guide layer formed on the active layer; and

an upper clad layer formed on the upper guide layer,

wherein the lower and upper clad layers have the same refractivity, and the lower clad layer includes a high refractivity layer, which is spaced from the lower guide layer by a constant distance and has a ~~distance, with~~ refractivity higher than that of the upper clad layer; and

wherein the high refractivity layer has an Al content (wt%) of approximately 0.85 to approximately 0.97 times as much as an Al content of the lower clad layer.

2. (original) The semiconductor laser device as set forth in claim 1,

wherein the high refractivity layer is spaced from the lower guide layer toward the side of the substrate by at least a distance corresponding to half of the total thickness of the upper and lower guide layers and the active layer.

3. (original) The semiconductor laser device as set forth in claim 1,

wherein the upper and lower guide layers have the same thickness.

4. (original) The semiconductor laser device as set forth in claim 1, wherein the upper and lower guide layers have the same refractivity.

5. (original) The semiconductor laser device as set forth in claim 1, wherein the high refractivity layer is disposed between the lower clad layer and the semiconductor substrate.

6. (original) The semiconductor laser device as set forth in claim 1, wherein the distance of the high refractivity layer spaced from the lower guide layer toward the side of the semiconductor substrate is less than 3 times as large as the total thickness of the upper and lower guide layers and the active layer.

7. (original) The semiconductor laser device as set forth in claim 1, wherein the high refractivity layer is disposed in the lower clad layer.

8. (original) The semiconductor laser device as set forth in claim 1, wherein the active layer is made of an i-GaAs based material, the upper and lower guide layers are made of an i-AlGaAs based material, the upper clad layer is made of a p-type AlGaAs based material, and the lower clad layer is made of an n-type AlGaAs based material.

9. (original) The semiconductor laser device as set forth in claim 1, wherein the active layer is made of an i-AlGaAs based material, the upper and lower guide layers are made of an i-AlGaAs based material, the upper clad layer is made of a p-type AlGaAs based material, and the lower clad layer is made of an n-type AlGaAs based material.

10. (canceled)

11. **(currently amended)** A semiconductor laser device, comprising:

a semiconductor substrate;

a lower clad layer formed on the semiconductor substrate;

a lower guide layer formed on the lower clad layer;

an active layer formed on the lower guide layer;

an upper guide layer formed on the active layer; and

an upper clad layer formed on the upper guide layer,

wherein

the lower clad layer includes a low refractivity layer, wherein said low refractivity layer and said upper clad layer have the same refractivity;

the lower clad layer further includes a high refractivity layer, which is spaced from the lower guide layer by a constant distance and has a refractivity higher than that of the upper clad layer; and

~~The semiconductor laser device as set forth in claim 9, wherein~~ the high refractivity layer has an Al content (wt%) of approximately 1.3 to approximately 2.5 times as much as an Al content of the lower guide layer.

12. **(currently amended)** A semiconductor laser device, comprising:

a semiconductor substrate;

a [[first]] lower clad [[layer]] structure formed on the semiconductor substrate;

~~a second lower clad layer formed on the first lower clad layer;~~

a lower guide layer formed on the ~~second~~ lower clad [[layer]] structure;

an active layer formed on the lower guide layer;

an upper guide layer formed on the active layer; and

an upper clad layer formed on the upper guide layer; [[,]]

wherein

the lower clad structure comprises first and second lower clad layers;

the ~~second~~ first lower clad layer and the upper clad layer have [[a]] the same first refractivity; [[, and]]

the [[first]] second lower clad layer is spaced from the lower guide layer by a constant distance and has a second refractivity higher than the first refractivity; and

the second lower clad layer has an Al content (wt%) of approximately 0.85 to approximately 0.97 times as much as an Al content of the first lower clad layer.

13. **(currently amended)** The semiconductor laser device as set forth in claim 12, wherein the lower clad structure further comprises a third lower clad layer.

~~A semiconductor laser device comprising:~~

~~a semiconductor substrate;~~

~~first, second and third lower clad layers sequentially formed on the semiconductor substrate;~~

~~a lower guide layer formed on the third lower clad layer;~~

~~an active layer formed on the lower guide layer;~~

~~an upper guide layer formed on the active layer; and~~

~~an upper clad layer formed on the upper guide layer,~~

~~wherein the third lower clad layer and the upper clad layer have a first refractivity, and the second lower clad layer has a second refractivity higher than the first refractivity.~~

14. (original) The semiconductor laser device as set forth in claim 13, wherein the first lower clad layer has the same refractivity as that of the third lower clad layer.

15-16. (canceled)

17. **(new)** The semiconductor laser device as set forth in claim 14, wherein the third lower clad layer is formed on the semiconductor substrate;

the second lower clad layer is formed on the third lower clad layer;
the first lower clad layer is formed on the second lower clad layer; and
the lower guide layer is formed on the first lower clad layer.

18. **(new)** The semiconductor laser device as set forth in claim 12, wherein
the second lower clad layer is formed on the semiconductor substrate;
the first lower clad layer is formed on the second lower clad layer; and
the lower guide layer is formed on the first lower clad layer.

19. **(new)** The semiconductor laser device as set forth in claim 12, wherein said distance is at least half of a total thickness of the upper and lower guide layers and the active layer.

20. **(new)** The semiconductor laser device as set forth in claim 12, wherein the upper and lower guide layers have the same thickness or the same refractivity.

21. **(new)** The semiconductor laser device as set forth in claim 12, wherein said distance is less than 3 times as much as a total thickness of the upper and lower guide layers and the active layer.

22. **(new)** The semiconductor laser device as set forth in claim 12, wherein
the active layer is made of one selected from the group consisting of an i-GaAs based material and an i-AlGaAs based material;
the upper and lower guide layers are made of an i-AlGaAs based material;
the upper clad layer is made of a p-type AlGaAs based material; and
the lower clad structure is made of an n-type AlGaAs based material.